



# SHA As-Built Pavement Data



## SHA OMT Asphalt Roundtables

SHA Construction History PM-003 Form

March 2017

Mark Chapman

# PM-003 Goal

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- Provide timely and accurate reporting of SHA pavement related accomplishments and improvements. This includes your assistance to improve feedback for SHA's task to collect, verify, and report data concerning several business plan performance measures for paving, patching, and select maintenance activities.
- This data is included in SHA's Business Plan, KPA, Asset Management, and Highway Inventory efforts. Data is also supplied to FHWA for HPMS purposes.



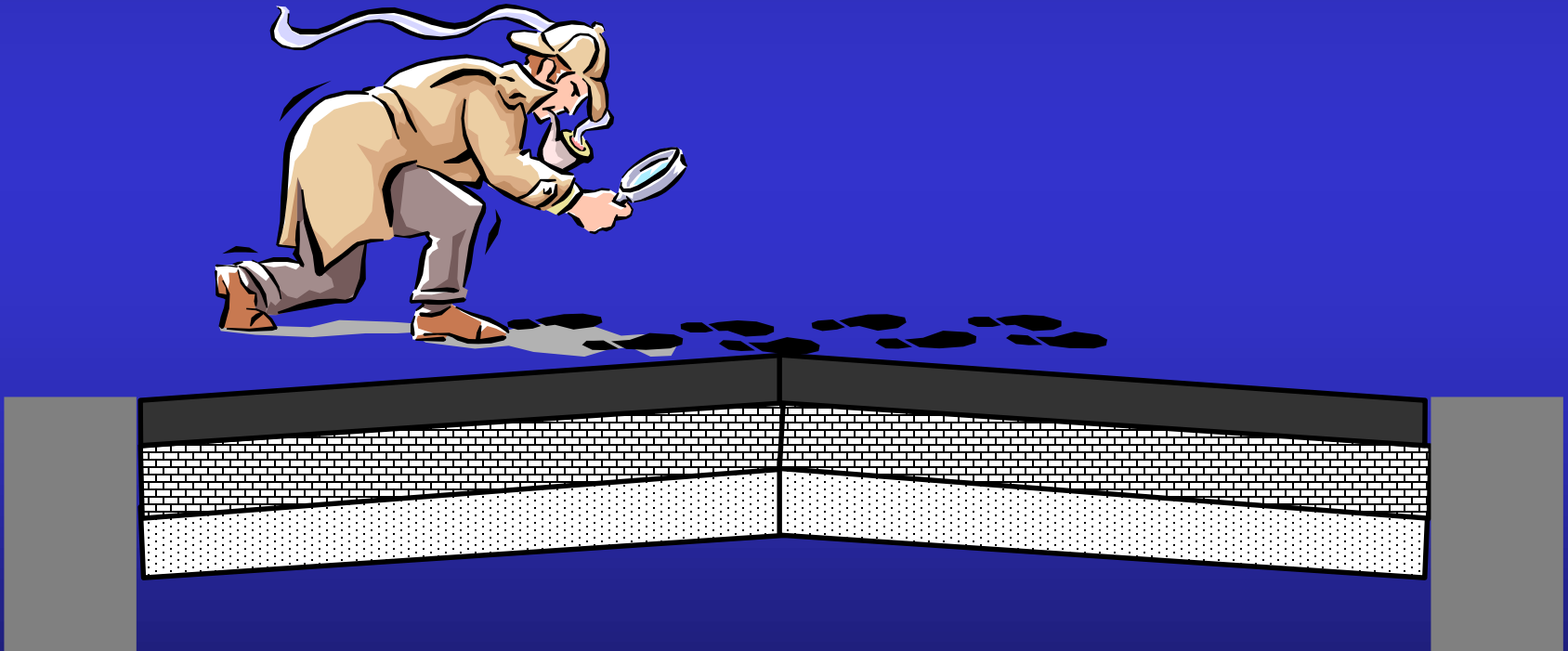
# SHA's Construction History Program

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- **Collect, document, and report “As-Built Pavement Data” for SHA, MDOT and FHWA.**
- Pavement Management's Construction History operations
  - Upon paving completion for all paving or patching projects, data collection and processing routines are performed to finalize data and make available to SHA.
  - Critical Data: Contract / FMIS, Location, Paving Dates, Activity Type, Pavement Typical Sections, Asphalt and Concrete Mix Design & Thickness, existing and new lanes, patching, ramp and shoulder info, ride share facilities.

# Construction History

## Pavement Typical Section





# Construction History Report

Layer	Thickness	Description	Type	Material	Contract	FMIS	Year
16	1.5	Surface	Asphalt	9.5mm, 64-22, Surface, L 2	XY3015177	AL283B52	05/15/2013
15	1	Wedge/Level	Asphalt	9.5mm, 64-22, Wedge/Level, L 2	XY3015177	AL283B52	05/15/2013
14	5	Patching PD	Asphalt	HMA 19.0mm, PG64-22, Patching over 3"	XY3015177	AL283B52	05/15/2013
13	1.5	Milling	Pavement Removal	Carbide Grinding	XY3015177	AL283B52	05/15/2013
12		Patching	Unknown	Permanent Patching -23402	23402	0	08/31/2010
11		Patching	Unknown	Permanent Patching -23402	23402	0	10/30/2009
10	2	Surface	Asphalt	Band SC	AL7975176	0	11/12/1997
9	1	Wedge/Level	Asphalt	Band SF	AL7975176	0	11/12/1997
8	1.5	Surface	Asphalt	Band SN	A -644-501-677	0	10/04/1979
7	2	Surface	Asphalt	Band BI	A -644-501-677	0	10/04/1979
6	6	Patching	Asphalt	Patching , BAND BI	A -644-501-677	0	10/04/1979
5	0.5	Surface	Aggregate Seals	Chip Seal	ED-57-614	0	1966
4	0.5	Surface	Aggregate Seals	Chip Seal	Maintenance	0	1957
3	3	Surface	Asphalt	Penetration Macadam - Bit./ Stone Mix	A -18	0	12/01/1922
2	3	Surface	Aggregate	Gravel	A -18	0	12/01/1922
1	8	Original Surface	Aggregate	Macadam - Stone	County	0	09/01/1908



# As-Built Data Sources

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- Plans and Invitation for Bids
- Materials Management System (MMS)
- Maryland Construction Management System (MCMS)
- OOC As-Built Directive (2009 Season start)
- PM-003 Data Collection Form
  - Completed by State Field Project Engineer and / or staff



# 2009 Implementation

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- **Construction Directive 07220.500.04 HMA: Pre-paving and Pavement Marking Conference**
  - ✓ Procedure #4, item aa.
  - ✓ As-Built Pavement Typical Section and other Details upon paving completion - to OMT  
<http://10.92.147.111/omt/doc/PM003AsBuilt.doc>
- **Contract Closeout**
  - ✓ OOC Record Submission Checklist



# The Form

Form PM-003						
As-Built Project Information Worksheet (one worksheet per each route)						
Data for OMT Pavement Management System						
Contract		FMS		PCA (if applicable)		
County		Route		Rnum		Direction
Exit#		Ramp#				
Limits of work (mile points preferred)		BMP / Station		EMP / Station		
<b>TYPE OF CONSTRUCTION:</b> (Check all that apply)						
New Construction		Resurfacing		Widening		Patching
Joint Seal		Crack Seal		Other		
Paving Dates: From To						
State Construction Project Engineer:						
<b>Pavement Typical Sections</b>						
<b>MAINLINE RESURFACING:</b> (Final Surface is top layer, Lane #1 is median lane)						
Lanes	Layer	Item Code	Cat. Code	Mix Design	Thick,"	
	Surface					
<b>WIDENING</b> , <b>NEW CONSTRUCTION</b> , <b>RAMP</b> , <b>OTHER</b>						
Lanes	Layer	Item Code	Cat. Code	Mix Design	Thick,"	
	Surface					
<b>SHOULDER:</b> Median, Outside						
Lanes	Layer	Item Code	Cat. Code	Mix Design	Thick,"	
	Surface					
<b>ADDITIONAL ACTIVITIES:</b>						
Milling: Yes No Type Coverage Depth"						
Full Depth Patching: Yes No Patch Type Depth"						
Partial Depth Patching: Yes No Patch Type Depth"						
Pavement Markings: Striping / Restriping: Yes No (for lanes, shoulders, turn lanes, painted medians, ramps, etc.)						
Remarks (changes to contract, revisions, add'l lanes, ramps, etc):						
Thank you!						
Contact: Mark Chapman, OMT - Pavement & Geotechnical Division 443-572-5056						
FAX 410-787-0486 mchapman@sha.state.md.us						
6/18/15						



# The Form – Contract & Location

Form PM-003 As-Built Project Information Worksheet (one worksheet per each route) Data for OMT Pavement Management System						
Contract	<u>XY5215177</u>	FMIS	<u>WA999B53</u>	PCA (if applicable)	<input type="checkbox"/>	
County	<u>WA</u>	Route	<u>US</u>	Rnum	<u>11</u>	Rsuff <u>BU</u> Direction <u>All</u>
Exit#	<input type="checkbox"/>	Ramp#	<input type="checkbox"/>			
Limits of work (mile points preferred)		BMP / Station	<u>0</u>	EMP / Station	<u>2.34</u>	
<b>TYPE OF CONSTRUCTION:</b> (Check all that apply)						
New Construction	Resurfacing	Widening	Patching	Joint Seal	Crack Seal	Other
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Paving Dates: From		<u>03/22/2017</u>	To	<u>05/02/2017</u>		
State Construction Project Engineer: <u>John Doe</u>						



# The Form – Pavement Details

## Pavement Typical Sections

**MAINLINE RESURFACING:** (Final Surface is top layer, Lane #1 is median lane)

Lanes	Layer	Item Code	Cat. Code	Mix Design	Thick,"
12	Surface	5001	504138	E12009H3F03F	1.25
12	Wedge/Level	5002	504142	E13109R2C36F	.75

**WIDENING** ☒, **NEW CONSTRUCTION** ☐, **RAMP** ☐, **OTHER** ☐

Lanes	Layer	Item Code	Cat. Code	Mix Design	Thick,"
3	Surface	5001	504138	E12009H3F03F	1.25
3	Base	5003	504302	E13119R4C20F	6
3	Sub-base	2004	201040		6
3	Sub-grade	2005	201055		12

**SHOULDER:** Median ☐, Outside ☒

Lanes	Layer	Item Code	Cat. Code	Mix Design	Thick,"
	Surface	5001	504138	E12009H3F03F	1.25
	Wedge/Level	5002	504142	E13109R2C36F	.75

## ADDITIONAL ACTIVITIES:

Milling: Yes ☒ No ☐ Type Grinding Coverage Mainline and Shoulder Depth" 2.0"

Full Depth Patching: Yes ☐ No ☒ Patch Type  Depth"

Partial Depth Patching: Yes ☒ No ☐ Patch Type HMA only Depth" 4.0"

Pavement Markings: Striping / Restriping: Yes ☒ No ☐ (for lanes, shoulders, turn lanes, painted medians, ramps, etc.)

Remarks (changes to contract, revisions, add'l lanes, ramps, etc): Redline - changed 12.5mm surface mix to 9.5mm HDFV

Thank you!

Contact: Mark Chapman OMT - Pavement & Geotechnical Division 443-572-5056  
FAX 410-787-0486 [mchapman@sha.state.md.us](mailto:mchapman@sha.state.md.us)

6/18/15



# Frequent Questions

- **Where is the form located?**
  - ✓ **SHA OMT Intranet webpage** <http://10.92.147.111/omt/doc/PM003AsBuilt.doc>
  - ✓ **SHA OOC** [http://shaintranet/ooc/forms/OOC\\_Forms/PM-003.doc](http://shaintranet/ooc/forms/OOC_Forms/PM-003.doc)
  - ✓ **Email or call Mark Chapman**
    - [mchapman@sha.state.md.us](mailto:mchapman@sha.state.md.us)
    - 443-572-5056
- **Hardcopy or Electronic?**
  - ✓ **Electronic preferred**
- **Milepoints, Stations, or GPS?**
  - ✓ **Milepoints preferred, (GPS in the future?)**
- **When should I submit the form?**
  - ✓ **Upon surface paving completion**
  - ✓ **End of construction season**
    - all completed surface paving
- **Send completed form to whom?**
  - ✓ **Mark Chapman – OMT Hanover**
    - 7450 Traffic Drive Hanover, MD 21076
    - [mchapman@sha.state.md.us](mailto:mchapman@sha.state.md.us)
    - Fax 410-787-0486

**Form PM-003**  
**As-Built Project Information Worksheet** (one worksheet per each route)  
Data for OMT Pavement Management System

Contract XX9015177 FMIS AL729B5C PCA (if applicable) \_\_\_\_\_  
 County AL Route MD Rnum 999 Rsuff BU Direction All  
 Exit# \_\_\_\_\_ Ramp# \_\_\_\_\_  
 Limits of work (mile points preferred) BMP / Station 0 EMP / Station 2.67

**TYPE OF CONSTRUCTION:** (Check all that apply)  
 New Construction ☐ Resurfacing ☒ Widening ☒ Patching ☒ Joint Seal ☐ Crack Seal ☐ Other ☐

Paving Dates: From 09/21/2008 To 10/01/2008  
 SHA Construction Project Engineer: John Doe

**Pavement Typical Sections**  
**MAINLINE RESURFACING:** (Final Surface is top layer, Lane #1 is median lane)

Lanes	Layer	Item Code	Cat. Code	Mix Design	Thick,"
12	Surface	5001	504138	E12009H3F03F	1.25
12	Wedge/Level	5002	504142	E13109R2C36F	.75

**WIDENING** ☒ **NEW CONSTRUCTION** ☐ **RAMP** ☐ **OTHER** ☐

Lanes	Layer	Item Code	Cat. Code	Mix Design	Thick,"
3	Surface	5001	504138	E12009H3F03F	1.25
3	Base	5003	504302	E13119R4C20F	6
3	Sub-base	2004	201040		6
3	Sub-grade	2005	201055		12

**SHOULDER:** Median ☐ Outside ☒

Lanes	Layer	Item Code	Cat. Code	Mix Design	Thick,"
	Surface	5002	504138	E12009H3F03F	1.25
	Wedge/Level	5001	504142	E13109R2C36F	.75

**ADDITIONAL ACTIVITIES:**  
 Milling: Yes ☒ No ☐ Type Grinding Coverage Mainline and Shoulder Depth" 2.0"  
 Full Depth Patching: Yes ☐ No ☒ Patch Type \_\_\_\_\_ Depth" \_\_\_\_  
 Partial Depth Patching: Yes ☒ No ☐ Patch Type HMA only Depth" 4.0"  
 Pavement Markings: Striping / Restriping: Yes ☒ No ☐ (for lanes, shoulders, turn lanes, painted medians, ramps, etc.)  
 Remarks (changes to contract, revisions, add'l lanes, ramps, etc.): redline - changed HMA surface from 12.5mm to 9.5mm 8PV  
 Thank you! Contact: Mark Chapman - OMT - Pavement & Geotechnical Division 443-572-5056  
 FAX 410-787-0486 [mchapman@sha.state.md.us](mailto:mchapman@sha.state.md.us) 3/4/09



# What Contracts require a PM-003?

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- **What contracts do I need to cover?**
  - ✓ Single ad
  - ✓ Multiple ad (AT, AX, etc.)
  - ✓ Areawide (inc. XX & XY)
  - ✓ Permits (Access, Utility, etc.)
  - ✓ Traffic
  - ✓ **Any project that “touches” a State owned pavement.**

# Milepoints

- Office of Planning and Preliminary Engineering
- <http://www.roads.maryland.gov/pages/hlr.aspx?PageId=832>



The screenshot shows the Maryland State Highway Administration (SHA) website. The header includes the Maryland state seal and the text "DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION". A search bar is located in the top right. Below the header is a navigation menu with links: HOME, BUSINESS CENTER, PROJECTS & STUDIES, COMMUTER & TRAVEL, SAFETY PROGRAMS, ENVIRONMENT & COMMUNITY, and INFO CENTER. The main content area is titled "HIGHWAY LOCATION REFERENCE" and includes a breadcrumb trail: Home > Projects & Studies > Traffic Studies and Statistics > Highway Location Reference. The page describes the Highway Location Reference (HLR) as a method for uniquely identifying roadway locations (milepoints) and provides a link to the "Introduction and General Information (PDF, 32kb)". It also mentions that the HLR is available in district book or on a CD-ROM. A contact information section lists Mr. Kevin Powers, Maryland State Highway Administration, Data Services Engineering Division, 707 North Calvert Street, Mail Stop C-607, Baltimore, Maryland 21202, with the email address [KPowers@sha.state.md.us](mailto:KPowers@sha.state.md.us). At the bottom, there is a section for the "Highway Location Reference 'All Intersections' Report for Years 1999 - 2012" with dropdown menus for "Select Year" and "Select County".

Maryland.gov | Phone Directory | State Agencies | Online Services

DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION

Search

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SHA  
State Highway  
Administration

Home > Projects & Studies > Traffic Studies and Statistics > Highway Location Reference

## HIGHWAY LOCATION REFERENCE

[Subscribe to E-mail Alerts](#)

The Highway Location Reference (HLR) provides a method for uniquely identifying roadway locations (milepoints) and to identify data elements that are most commonly requested. Please read the [Introduction and General Information \(PDF, 32kb\)](#) for more information.

The Highway Location Reference is also available in district book or on a CD-ROM.

If you would like to receive the book or a CD-Rom write to:

Mr. Kevin Powers  
Maryland State Highway Administration  
Data Services Engineering Division  
707 North Calvert Street  
Mail Stop C-607  
Baltimore, Maryland 21202  
[KPowers@sha.state.md.us](mailto:KPowers@sha.state.md.us)

Highway Location Reference "All Intersections" Report for Years 1999 - 2012

Select Year Select County

PRINT TEXT RESIZE BOOKMARK RSS



# HLR example

MARYLAND DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
DATA SERVICES ENGINEERING DIVISION  
HIGHWAY LOCATION REFERENCE

PAGE: 37

COUNTY: PRINCE GEORGE'S  
DISTRICT: 3  
DATE: 12/31/15

ROUTE NUMBER: MD 4PA CONTINUED  
INVENTORY DIRECTION: WEST  
ROUTE NAME: MARLBORO PIKE

STATE SYSTEM	FUNCTIONAL CLASS	MEDIAN TYPE	ACCESS CONTROL	NHS	MILEPOINT	MILEPOINT DESCRIPTION	MARKED LANES	SURFACE WIDTH/TYPE*	AADT
STATE SECONDARY	URB LOCAL	NONE (UNDIV)	NONE	NOT NHS	00.360		1	10I	0
					00.420		2	20I	
					00.510 MD726	GREEN LANDING RD			
					00.510 CO4025	MARLBORO PIKE (AHEAD)			

ROUTE NUMBER: MD 4PB  
INVENTORY DIRECTION: NORTH  
ROUTE NAME: DOWER HOUSE RD

STATE SYSTEM	FUNCTIONAL CLASS	MEDIAN TYPE	ACCESS CONTROL	NHS	MILEPOINT	MILEPOINT DESCRIPTION	MARKED LANES	SURFACE WIDTH/TYPE*	AADT
STATE SECONDARY	URB LOCAL	NONE (UNDIV)	NONE	NOT NHS	00.000		1	15I	0
					00.000	TRAFFIC SIGNAL			
					00.000 CO 92	DOWER HOUSE RD (BACK)			
					00.000 MD 4	PENNSYLVANIA AVE			
					00.010		2	24I	
					00.030 CO5672	PENNA AVE ACCESS RD			

ROUTE NUMBER: MD 5  
INVENTORY DIRECTION: NORTH  
ROUTE NAME: BRANCH AVE

STATE SYSTEM	FUNCTIONAL CLASS	MEDIAN TYPE	ACCESS CONTROL	NHS	MILEPOINT	MILEPOINT DESCRIPTION	MARKED LANES	SURFACE WIDTH/TYPE*	AADT
STATE PRIMARY	URB OPA	POSITIVE BARRIER	PARTIAL	NHS	00.000				
					00.000	CHARLES CO/L			
					02.550		4	48I	57,872
					02.550 US301	CRAIN HWY			
					02.550	END X-REF W/ US 301			
					02.610	SPEED LIMIT 55 MPH			
					02.680	STRUC #160056001			
					02.680 US301	CRAIN HWY (SBL)			
					02.820		5	60I	
					02.855		6	72I	
					03.030	SPUR FR MD 373 - SP105			
					03.030	SPUR TO MD 373 - SP414			

\*A,B = UNIMPROVED; C = GRADED & DRAINED; D,E = SOIL, GRAVEL, STONE; F,G = LOW TYPE BITUMINOUS  
H,I = HIGH TYPE BITUMINOUS; J = CONCRETE; K = BRICK; L = BLOCK

PAGE: 37